

#### ABSTRACT OF THE DISCLOSURE

Plasma etching or resputtering of a layer of sputtered materials including opaque metal conductor materials may be controlled in a sputter reactor system. In one embodiment, resputtering of a sputter deposited layer is performed after material  
5 has been sputtered deposited and while additional material is being sputter deposited onto a substrate. A path positioned within a chamber of the system directs light or other radiation emitted by the plasma to a chamber window or other optical view-port which is protected by a shield against deposition by the conductor material. In one  
10 embodiment, the radiation path is folded to reflect plasma light around the chamber shield and through the window to a detector positioned outside the chamber window. Although deposition material may be deposited onto portions of the folded radiation path, in many applications, the deposition material will be sufficiently reflective to permit the emission spectra to be detected by a spectrometer or other suitable  
15 detector without significant signal loss. The etching or resputtering may be terminated when the detector detects that an underlying layer has been reached or when some other suitable process point has been reached.